

sionally until about the first week in August. The old beetles of *mucidus* kept in cages began dying at that time. In captivity the new generation of the smaller species of *Lixus* deposited a few eggs, but this ovipositing ceased by the end of the first week in August. After that date diligent search did not reveal any beetles of either species in the field. The hard earth was full of sun-baked cracks, and the beetles may have gone into hiding there, although none were found. They are strong and ready flyers when thrown into the air.

In the course of the collection of the larvæ and pupæ, numerous nearly mature larvæ were found attacked by small white maggots. The first adult flies from these emerged August 3, and in all over thirty-five specimens, identified by Dr. J. M. Aldrich as *Sarcophaga helioides* Tns., were bred from the larvæ. Dr. Aldrich informs me that this maggot usually feeds on dead insects, and that there are only a few authentic records of its parasitism. From the fact that so many individuals were bred out from material collected all over the lake bed, I am inclined to believe that in this case the fly is truly parasitic. Three specimens of a hymenopterous parasite, determined by Mr. R. A. Cushman as *Epiurus pterophori* (Ashm.), were also reared from the nearly mature larvæ.

THE NEARCTIC AND EUROPEAN SPECIES OF THE SUBGENUS PHÆDON (CHRY SOMELINÆ)

BY MELVILLE H. HATCH*

- A¹. Serial punctures of elytra fine, almost lost, hardly stronger than the interstitial ones which are numerous and visible; Ore. to Cal. *prasinella* Lec.
- A². Striæ more coarsely punctate, intervals more finely punctate.
 - B¹. Intervals of elytra subrugulose; clypeal suture impressed at sides, feeble at middle; color shining metallic.
 - C¹. Humeral callus present.
 - D¹. Head and pronotum not alutaceous, micropunctulate.
 - E¹. Humeral callus prominent; elytral intervals micropunctulate; length 3.5 mm.; Cal. to Wash. and Alta *oviformis* Lec.
 - E² Humeral callus weak.
 - F¹. Elytral intervals coarsely punctate; length 3.4 mm.; Wash. *punctatus* sp. nov.

* Contribution from the Zoölogical Laboratory of the University of Washington.

- F². Elytral intervals micropunctulate; length 3.5-4 mm.; Europe.....*cochleariæ* F.
- D². Head and pronotum alutaceous; humeral callus weak; elytral intervals micropunctulate.
- E¹. Elytra not alutaceous; pronotum and head subequally punctate; length 3.8 mm.; N. Y.....
.....*dietrichi* sp. nov.
- E². Elytra alutaceous; punctures of pronotum smaller than those of head; length 3.2 mm.; N. Y.....
.....*microreticulatus* sp. nov.
- C². Humeral callus absent.
- D¹. Europe; dorsum not alutaceous, micropunctulate; length 2.5-3 mm.....*lævigatus* Dft.
- D². Mex., Fla., Pa.: *viridis* Melsh. and, with pronotum more finely punctate.....var. *æruginosus* Suffr.
- B². Intervals not subrugulose; humeral callus present.
- C¹. Clypeal suture impressed at sides, feeble at middle.
- D¹. Narrowly oval; humeral callus weak; metallic cupreous; length 3.5 mm.; Alta, N. Y.....*carri* sp. nov.
- D². Broadly oval; length 3 mm.; Austria, Germany.....
.....*grammicus* Dft.
- C². Clypeal suture not impressed at ends, equal throughout.
- D¹. Intervals flat; color metallic.
- E¹. Intervals not alutaceous; humeral callus prominent; metallic blue, rarely green; length 3-4 mm.; Europe, Labrador (Sherman), N. Y., Wash.....*armoraciæ* L.
- E². Intervals alutaceous; length 4.8 mm.; Utah.....
.....*purpurea* Linell.
- D². Intervals convex; color shining black, not metallic; humeral callus prominent; length 3.9 mm.; Wash.....
.....*niger* sp. nov.

The descriptions of *prasinella*, *viridis*, and *æruginosus* are taken from Crotch, *purpurea* from the original description, and *grammicus* from Kuhnt, (Ill. Best.-Tab. Käf. Deutschl. 1913.) Kuhnt mentions feebly defined aberrations of *armoraciæ*, *lævigatus*, and *cochleariæ*. None of the New York specimens I have seen are *viridis*, at least as defined by Crotch, so this species must be eliminated from the list of the species of that state. The types of the new species are in the collection of the author. I am indebted to Mr. F. S. Carr and Mr. Henry Dietrich, who have aided in my study with material from their collections, and I take pleasure in naming species in their honor.

Phædon (s. str.) punctatus Hatch, sp. nov.

Above shining greenish metallic, beneath black, feebly bronzed. Head and pronotum coarsely punctate, micropunctulate. Clypeal suture impressed at sides, feeble at middle. Elytra octo-punctato-striate plus a scutellar stria, striæ not impressed; intervals flat, transversely rugose, coarsely punctate, the punctures finer than the stria punctures; marginal interval with a striaform series of punctures which are more approximate and feebly larger cephalad, more distant and feebly smaller caudad; humeral callus weak. Venter punctate, alutaceous. Length 3.4 mm., width 2.3 mm.

Type and paratype: Washington.

Phædon (s. str.) dietrichi Hatch, sp. nov.

Shining metallic bronze. Head and pronotum coarsely punctate, alutaceous. Clypeal suture impressed at sides. Elytra octo-punctato-striate plus a scutellar stria, striæ not or scarcely impressed; intervals flat, transversely rugose, sparsely micropunctulate; marginal interval with a striaform series of punctures which are more approximate and feebly larger cephalad, more distant and feebly smaller caudad; humeral callus weak. Venter punctate, alutaceous. Length 3.8 mm., width 2.8 mm.

Type: Ringwood, Ithaca, N. Y., May 20, 1919. H. Dietrich.

Phædon (s. str.) microreticulatus Hatch, sp. nov.

Above shining greenish cupreous metallic (type) or cupreous; beneath black, feebly cupreous; throughout alutaceous. Head coarsely punctate, pronotum more finely so. Clypeal suture impressed at sides. Elytra octo-punctato-striate plus a scutellar stria, striæ not or feebly impressed; intervals flat, transversely rugose, sparsely micropunctulate; marginal interval with a striaform series of equal punctures more approximate cephalad; humeral callus weak. Venter punctate, alutaceous. Length 3.2 mm., width 2.6 mm.

Type: Olcott, N. Y., April 15, 1923. H. Dietrich. Two paratypes: Olcott, N. Y., February 11, 1925. H. Dietrich, and E. Aurora, N. Y., October 4, 1925. H. Dietrich, in collection of Henry Dietrich.

Phædon (s. str.) carri Hatch, sp. nov.

Above shining metallic cupreous (type), rarely greenish; beneath shining black; tibiæ and tarsi feebly paler. Head and pronotum coarsely punctate, micropunctulate. Clypeal suture impressed at sides, feeble at middle. Elytra octo-punctato-striate plus a scutellar stria, striæ not impressed except for apical half of sutural stria; intervals flat, not appreciably rugose, equally micropunctate; the marginal interval with a striaform series of punctures which are

larger and more distant medially; humeral callus weak. Venter coarsely punctate, very feebly alutaceous. Length 3.5 mm., width 2.2 mm.

Type and four paratypes: Edmonton, Alta., June 11, 1918, F. S. Carr. Five paratypes: Edmonton, Alta., June 12, 1918. F. S. Carr, in collection of F. S. Carr. Five paratypes: McLean Bog, Cortland Co., N. Y., August 8, 1917. H. Dietrich; Olcott, N. Y., March 26, 1921; December 9, 1923; May 2, 1926. H. Dietrich; Ringwood, Ithaca, N. Y., May 20, 1919. H. Dietrich, in collection of Henry Dietrich.

Phædon (s. str.) **niger** Hatch, n. sp.

Shining black, not metallic. Head and pronotum coarsely punctate, micropunctulate, feebly alutaceous. Clypeal suture not impressed at sides, equal throughout. Elytra octo-impresso-punctato-striate plus an unimpressed scutellar stria, the sutural stria unimpressed at basal half; the intervals convex, micropunctate, the punctures of variable size; the first interval with a short series of larger punctures; the marginal interval with a longer striaform series of larger punctures, approximate and smaller towards its extremities, larger more distant and cuspiform at middle; humeral callus prominent. Venter punctate, alutaceous. Length 3.9 mm., width 2.6 mm.

Type: Snohomish Co., Wash. Stickney Lake, July 26, 1927, Trevor Kincaid. _____

OUR FIRST RHYPAROCHROMUS (HEMIP. LYGÆIDÆ)

Our collectors in Central California have recently been taking a species of *Rhyparochromus* that agrees with *sabulicola* Thoms. in its color markings, and size, and with *chiragra* Fabr. in its long scutellum. This combination is not recorded for any of the European varieties of this variable species so I would suggest that this be called **R. chiragra californicus** n. var. It was first taken by Mr. C. T. Dodds at Albany, Contra Costa County, California, February 26, 1921 (type). Mr. L. S. Slevin has taken numbers at Carmel, California, in April and October; and Santa Cruz, Calif., Febr. 27, 1925 (allotype); Mr. Robert Usinger has a series taken at Oakland, Walnut Creek and Stanford University, California, from April to July. Other specimens are: Stockton, California (F. E. Blaisdell), and Berkeley, California (A. C. Davis). Holotype, No. 2579, and allotype, No. 2580, in Museum of the California Academy of Sciences.—E. P. Van Duzee.